

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 18

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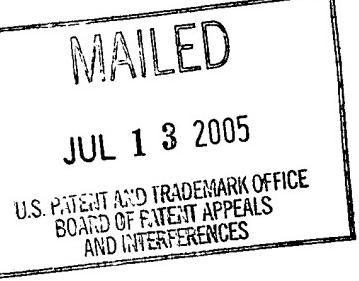
DIRECTOR OFFICE
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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ERWIN B. BELLERS

Appeal No. 2005-0200
Application No. 09/840,817

ON BRIEF



Before KRASS, RUGGIERO, and MACDONALD, Administrative Patent Judges.

RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal from the final rejection of claims 1-20, which are all of the claims pending in the present application. An amendment filed February 12, 2004 after final rejection was approved for entry by the Examiner.

The disclosed invention relates to a video signal processor which evaluates candidate vectors of enhancement algorithms

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utilizing an error function biased towards spatio-temporal consistency with a penalty function. The penalty function increases with the spatial and temporal distance of the subject block from the block for which the candidate vector was optimal.

Claim 1 is illustrative of the invention and reads as follows:

1. A receiver, including a video enhancement mechanism for enhancing video information with spatio-temporal consistency, comprising:

at least one enhancement unit enhancing a characteristic other than position of a selected pixel region of video information utilizing at least one candidate enhancement vector of enhancement algorithms to generate an enhanced pixel region for each candidate enhancement vector, each said enhanced pixel region equivalent to enhancement of said selected pixel region utilizing a respective candidate enhancement vector of enhancement algorithms; and

a selection unit computing an error for each said enhanced pixel region utilizing a bias towards spatio-temporal consistency of a respective enhanced pixel region with spatially adjacent pixel regions in a picture containing said selected pixel region and with a counterpart pixel region in one or more pictures successive with said picture containing said selected pixel region, said selection unit selecting an enhanced pixel region having a best enhancement for spatio-temporal consistency.

The Examiner relies on the following prior art:

Gerard de Haan et al. (de Haan), "True-Motion Estimation with 3-D Recursive Search Block Matching," IEEE Transactions On Circuits And Systems For Video Technology, 3(5), pp. 368-79 (Oct. 1993).

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Claims 1, 2, 4-6, 8-10, 12-14, 17, and 18 stand finally rejected under 35 U.S.C. § 102(b) as being anticipated by de Haan. Claims 3, 7, 11, 15, 16, 19, and 20 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over de Haan.

Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the Briefs¹ and Answer for the respective details.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the Examiner, and the evidence of anticipation and obviousness relied upon by the Examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, Appellant's arguments set forth in the Briefs along with the Examiner's rationale in support of the rejections and arguments in rebuttal set forth in the Examiner's Answer.

It is our view, after consideration of the record before us, that the de Haan reference does not fully meet the invention as set forth in claims 1, 2, 4-6, 8-10, 12-14, 17, and 18. With

¹The Appeal Brief was filed June 1, 2004 (Paper No. 13). In response to the Examiner's Answer dated June 16, 2004 (Paper No. 14), a Reply Brief was filed August 19, 2004 (Paper No. 15), which was acknowledged and entered by the Examiner as indicated in the communication dated September 7, 2004 (Paper No. 16).

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respect to the Examiner's 35 U.S.C. § 103(a) rejection, we are also of the view that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as recited in claims 3, 7, 11, 15, 16, 19, and 20. Accordingly, we reverse.

We consider first the rejection of claims 1, 2, 4-6, 8-10, 12-14, 17, and 18 under 35 U.S.C. § 102(b) as being anticipated by de Haan. Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.), cert. dismissed, 468 U.S. 1228 (1984); W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

With respect to the appealed independent claims 1, 5, 9, 13, and 17, the Examiner attempts to read the various limitations on the disclosure of de Haan. In particular, the Examiner directs attention (Answer, pages 3-5) to various portions of pages 368-371, 374, and 375 of de Haan.

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Appellant's arguments in response assert a failure of de Haan to disclose every limitation in independent claims 1, 5, 9, 13, and 17 as is required to support a rejection based on anticipation. Appellant's assertions (Brief, pages 8 and 9; Reply Brief, pages 2 and 3) focus on the contention that, in contrast to the claimed invention which requires the enhancement of a characteristic "other than position" of a selected pixel region of video information, the disclosure of the de Haan reference is limited to the determination of a positional relationship among fields.

After reviewing the de Haan reference in light of the arguments of record, we are in general agreement with Appellant's position as expressed in the Briefs. We agree with Appellant that, to whatever extent de Haan discloses the enhancement of a video characteristic, such enhancement is limited to a displacement, i.e., a position, of a block of pixels. We further agree with Appellant that, although the Examiner has made reference to the candidate vectors C in equation (26) at page 373 of de Haan in section VI which discusses smoothing, these candidate vectors are displacement vectors used for enhancing a displacement or positional video characteristic.

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In view of the above discussion, since all of the claim limitations are not present in the disclosure of de Haan, we do not sustain the Examiner's 35 U.S.C. § 102(b) rejection of independent claims 1, 5, 9, 13, and 17, nor of claims 2, 4, 6, 8, 10, 12, 14, and 18 dependent thereon.

Turning to a consideration of the Examiner's 35 U.S.C. § 103(a) rejection of dependent claims 3, 7, 11, 15, 16, 19, and 20 based on de Haan, we do not sustain this rejection as well. In addressing the language of the rejected claims, the Examiner refers to the discussion at pages 372-373 of de Haan which describes the use of "penalties" that are added to error functions which are related to the length of a difference vector between an evaluated candidate vector and neighboring vectors. We find nothing, however, in the cited portion of de Haan, or elsewhere in the document, which would overcome the deficiencies of de Haan in disclosing enhancement of video characteristics "other than position" as discussed supra.

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In summary, we have not sustained either of the Examiner's rejections of the claims on appeal. Therefore, the decision of the Examiner rejecting claims 1-30 is reversed.

REVERSED

Errol A. Krass)
ERROL A. KRASS)
Administrative Patent Judge)
)
Joseph F. Ruggiero)
JOSEPH F. RUGGIERO)
Administrative Patent Judge)
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Allen R. Macdonald)
ALLEN R. MACDONALD)
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